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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/783,678	02/20/2004	Dallas W. Meyer	K35R1672.D1	6998

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EXAMINER	
TUGBANG, ANTHONY D	
ART UNIT	**PAPER NUMBER**
3729	

DATE MAILED: 05/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/783,678	MEYER ET AL.	
	Examiner	Art Unit	
	A. Dexter Tugbang	3729	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *14-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *14-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *5/3/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Priority

1. Applicant's claim for the benefit of a prior-filed application under 35 U.S.C. 119(e) or under 35 U.S.C. 120, 121, or 365(c) is acknowledged.

While the Preliminary Amendment filed on February 20, 2004 does correctly reference the prior parent application 09/747,202, the reference does not include the current status, i.e. that it matured into U.S. Patent 6,721,142. The specification would need to be amended to include the current status of the parent application.

Specification

2. Applicant is reminded of the proper content of an abstract of the disclosure.

A patent abstract is a concise statement of the technical disclosure of the patent and should include that which is new in the art to which the invention pertains. If the patent is of a basic nature, the entire technical disclosure may be new in the art, and the abstract should be directed to the entire disclosure. If the patent is in the nature of an improvement in an old apparatus, process, product, or composition, the abstract should include the technical disclosure of the improvement. In certain patents, particularly those for compounds and compositions, wherein the process for making and/or the use thereof are not obvious, the abstract should set forth a process for making and/or use thereof. If the new technical disclosure involves modifications or alternatives, the abstract should mention by way of example the preferred modification or alternative.

The abstract should not refer to purported merits or speculative applications of the invention and should not compare the invention with the prior art.

Where applicable, the abstract should include the following:
(1) if a machine or apparatus, its organization and operation;
(2) if an article, its method of making;
(3) if a chemical compound, its identity and use;
(4) if a mixture, its ingredients;
(5) if a process, the steps.

Extensive mechanical and design details of apparatus should not be given.

3. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

4. The abstract of the disclosure is objected to because the content is not directed to the claimed invention (e.g. the process steps of at least Claim 14) and is not limited to one, single paragraph. Correction is required. See MPEP § 608.01(b).

5. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: A Process of Making a Non-Corrosive GMR Slider for Proximity Recording.

Claim Objections

6. Claim 14 is objected to because of the following informalities.

In Claim 14, the term --the-- should be inserted before "second ferromagnetic" (line 10).

Appropriate correction is required.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 14, 15, 16, 18, 19 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al 5,608,593 in view of Fujikata et al 5,766,743.

Kim discloses a method of fabricating a slider with a disk (recording medium) having a disk surface during operation comprising: forming a first ferromagnetic layer (e.g. 104 in Fig. 5) having an end which will be proximal to a disk surface; forming a non-magnetic metal layer (e.g. spacer 106) on the first ferromagnetic layer, the non-magnetic metal layer having and end which will be proximal to the disk surface during operation; forming a second ferromagnetic layer (e.g. 108) on the non-magnetic metal layer, the second ferromagnetic layer having an end which will be proximal to the disk surface during operation; forming a permanent magnet layer (e.g. 118, 120) on the second ferromagnetic layer, the permanent magnet layer having and end which will be proximal to the disk surface during operation; recessing ends (e.g. side portions) of the non-magnetic metal layer 106 (in Fig. 6) and electrical leads (e.g. 122, 124 in Fig. 7) from the disk surface to form recessed areas (in Fig. 7); and filling the recessed areas with protective materials (e.g. capping layer 126 and gap layer 128 in Fig. 8).

Regarding Claim(s) 15 and 21, the protective material (e.g. 126, 128) of Kim is at least one layer of the protective material that is applied to the proximal ends of the stacked layers and the electrical leads and is filled and applied in one, or the same process (sequence of Fig. 6 and 7).

Regarding Claim(s) 16, the recessing step of Kim is performed by reactive ion etching (e.g. ion-milling, col. 7, lines 1+).

Regarding Claim(s) 18, Kim shows two ends (e.g. side portions) of the non-magnetic metal being recessed from the disk surface (in Fig. 6).

Kim teaches substantially all of the limitations of the claimed manufacturing method except forming an antiferromagnetic layer (as required in step D in Claim 14). Kim forms a permanent magnet layer (e.g. 118, 120) on the second ferromagnetic layer, but Kim does not mention whether this permanent magnet layer is actually an antiferromagnetic layer with antiferromagnetic properties.

Fujikata suggests that an antiferromagnetic layer can be substituted for, or interchanged with, a permanent magnetic layer to effect magnetic biasing direction and detecting of the external magnetic field (see col. 5, lines 60+ and Claim 12).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have substituted an antiferromagnetic layer having antiferromagnetic material properties, for the permanent magnet layer, as taught by Fujikata, to positively effect the magnetic biasing direction and detecting of the external magnetic field of the slider.

9. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al in view of Fujikata et al, as applied to claim 14 above, and further in view of Japanese Patent Publication JP 57-108265, referred to hereinafter as JP'265, and Aine, Re. 32,464.

Kim, as modified by Fujikata, discloses the claimed manufacturing method as relied upon above. Kim further teaches that the filling step for the protective material (capping layer 126 and gap layer 128) can comprise a material of Tantulum (Ta) (see col. 7, lines 25-33 and col. 4, lines

lines 39-44). Kim does not mention that the filling step of the protective material (e.g. Ta) is performed by sputter deposition.

However, to deposit a protective material that includes Ta is conventional, old, and notoriously well known in the art for the purpose of applying the material in a certain pattern on a surface. As evidence of obviousness, the examiner cites JP'265 (see Constitution) and Aine (see col. 4, lines 6-12) as each show that a protective material that includes Ta can be deposited by sputtering.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the method of Kim by performing the filling step for the protective material specifically by sputtering deposition, as taught conventionally by JP'265 and Aine, to positively achieve a certain pattern of protective material.

10. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al in view of Fujikata et al, as applied to claim 14 above, and further in view of Haji-Sheikh 5,667,879.

Kim, as modified by Fujikata, discloses the claimed manufacturing method as relied upon above, further including that the protective material can be made of Ta. Kim does not teach that the protective material can consist of silicon nitride.

Haji-Sheikh shows that a protective material (e.g. 36) can consist of silicon nitride for protection of the entire structure during any subsequent processing (col. 4, lines 39-44).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have substituted the Ta material of Kim, for the silicon nitride material of Haji-Sheikh, to positively protect the entire structure during any subsequent processing.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to A. Dexter Tugbang whose telephone number is 571-272-4570. The examiner can normally be reached on Monday - Friday 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Vo can be reached on 571-272-4690. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A. Dexter Tugbang
Primary Examiner
Art Unit 3729

April 27, 2006